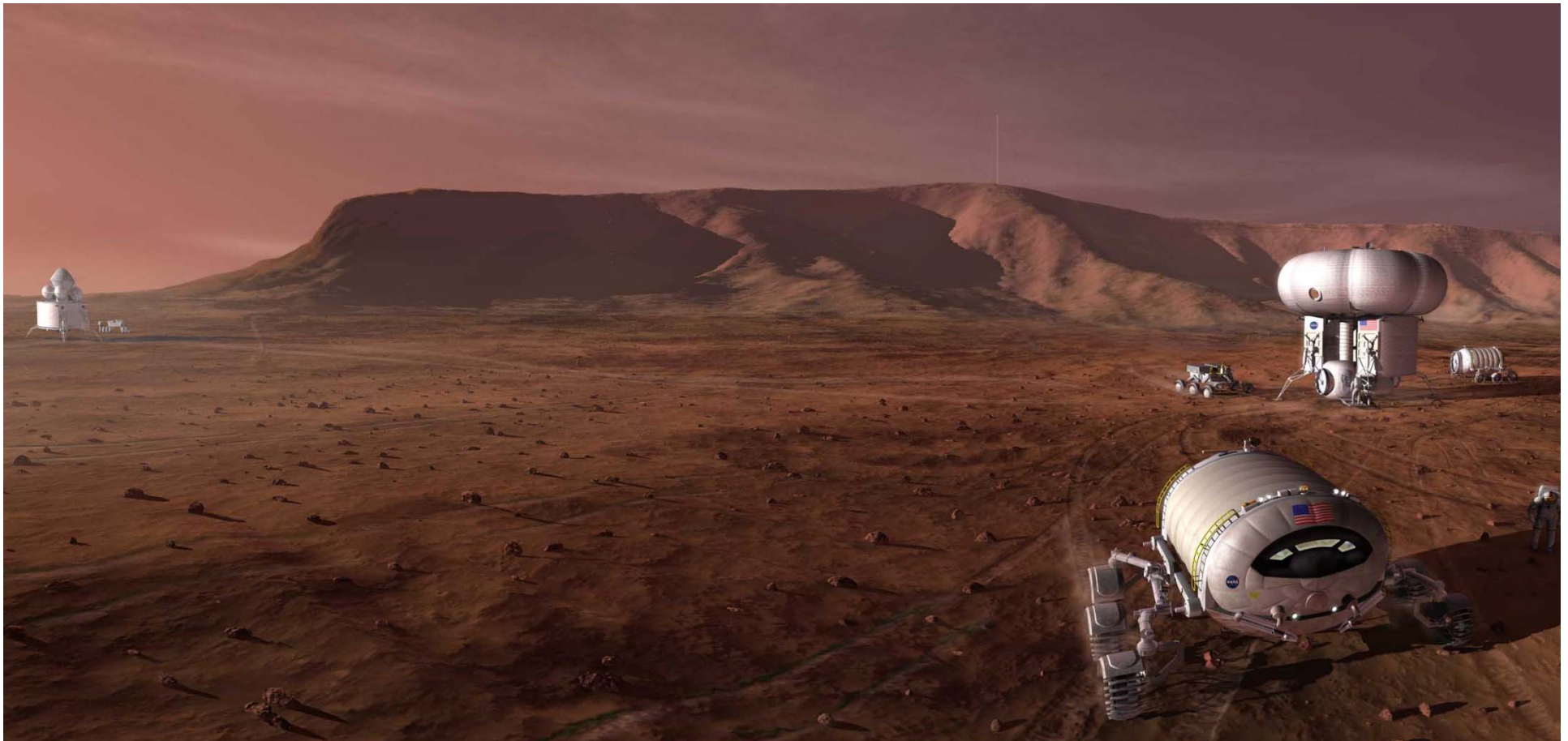
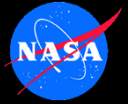


# *Humans 2 Mars Summit*

## *Entry Descent and Landing - Propulsion*

National Aeronautics  
and Space Administration

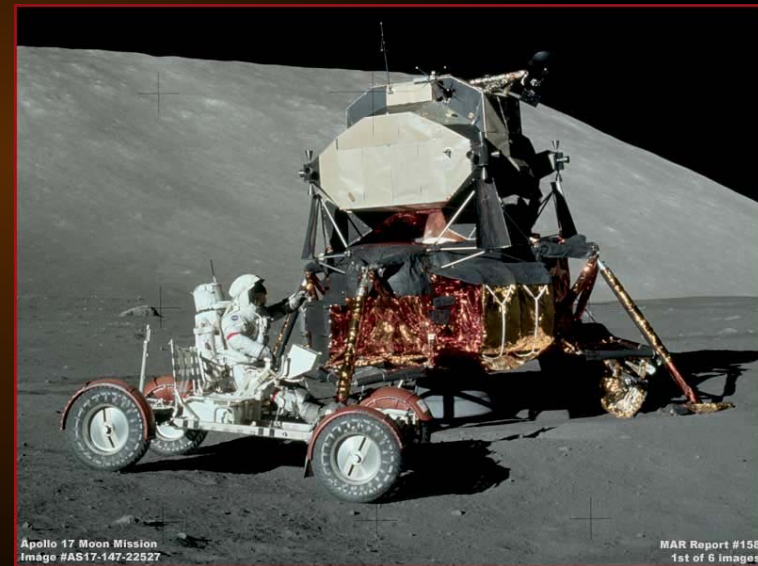
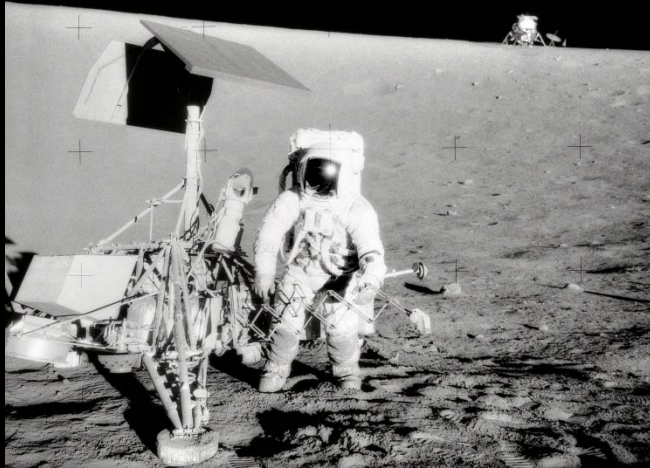


*Kendall K. Brown*  
*NASA George C. Marshall Space Flight Center*

*7 May, 2013*

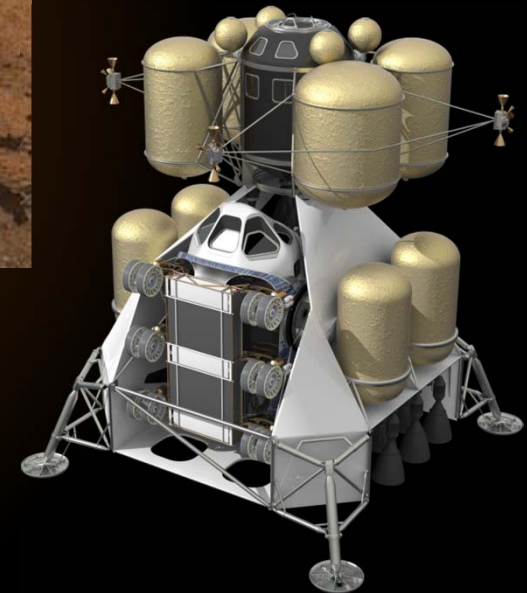
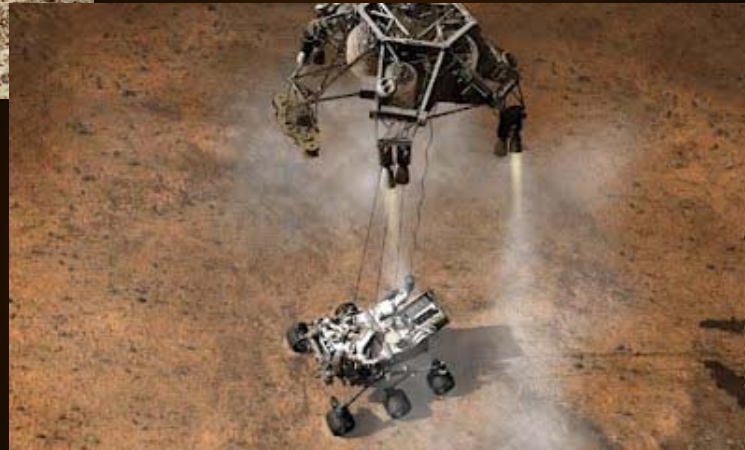


# Lunar Landing – Robotic to Crew Landing





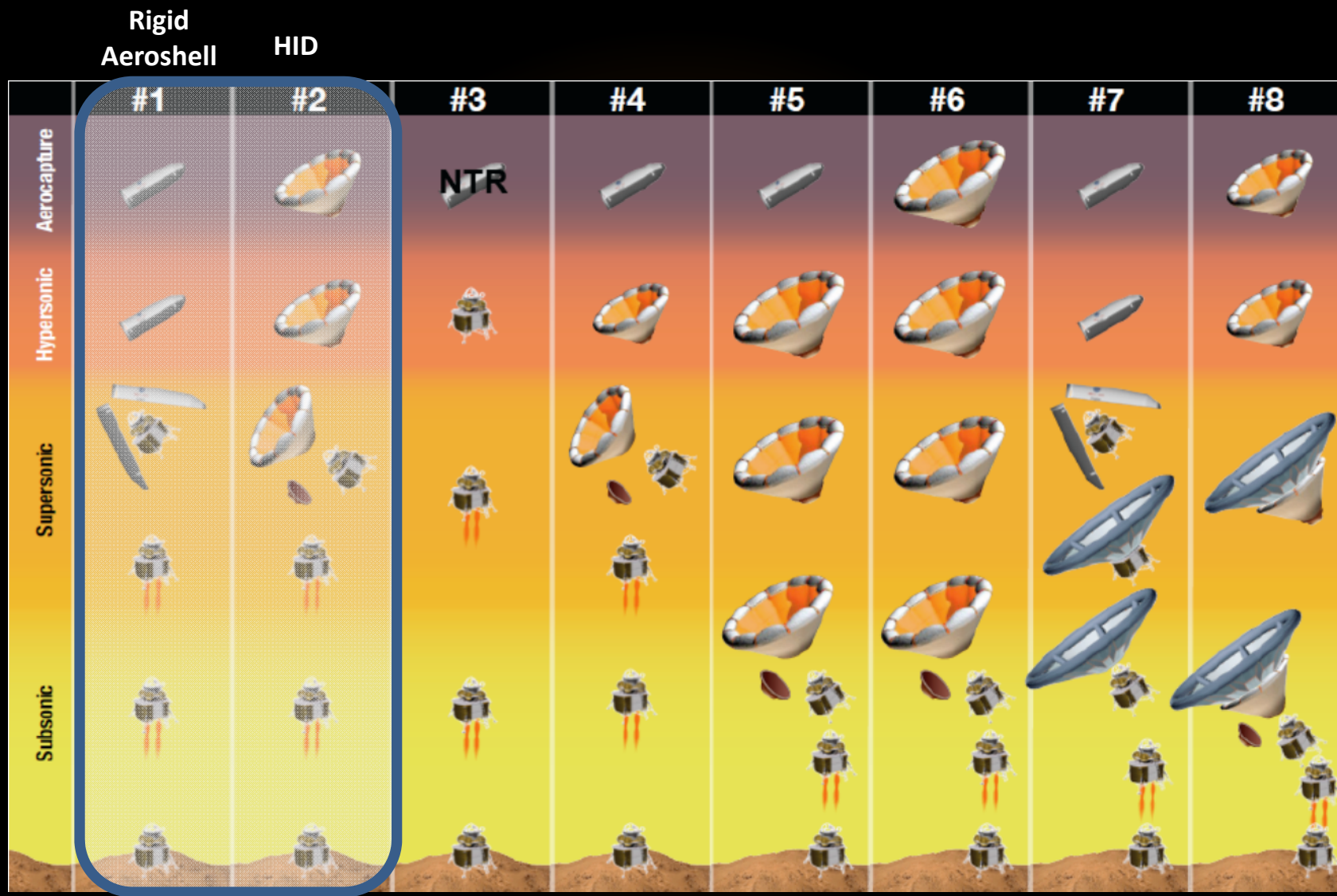
# Mars EDL History







# EDL-SA Architectures

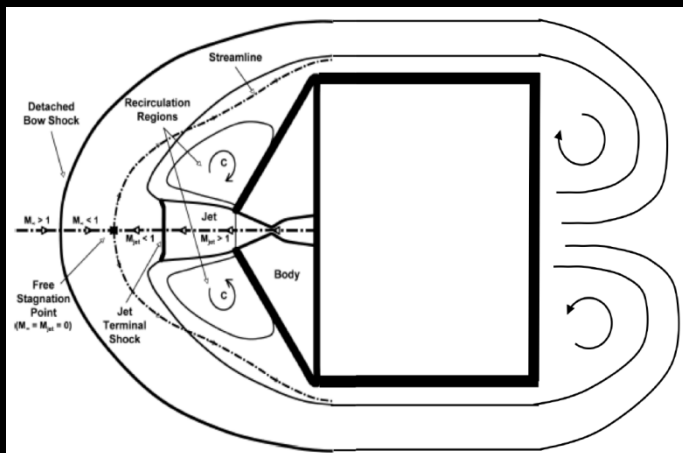




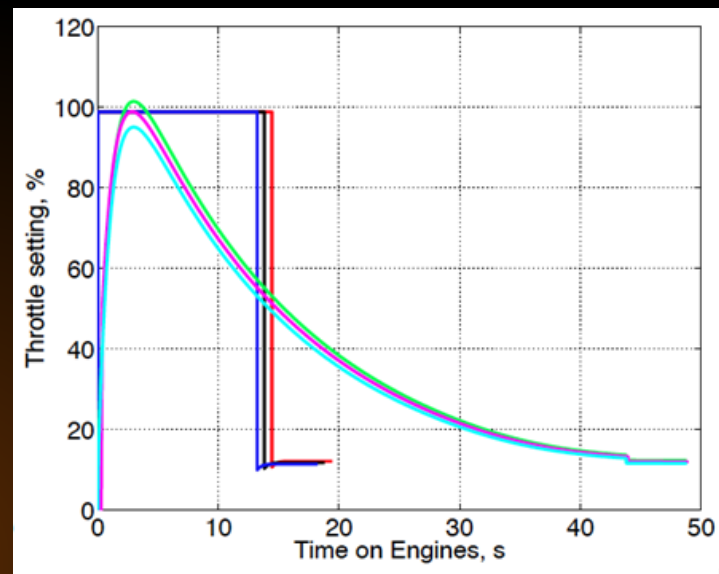
# Propulsion Challenges



## Supersonic Retro Propulsion (SRP)



## Throttle Profile with High Thrust



## Skycrane Plume Effects

